

## REMARKS

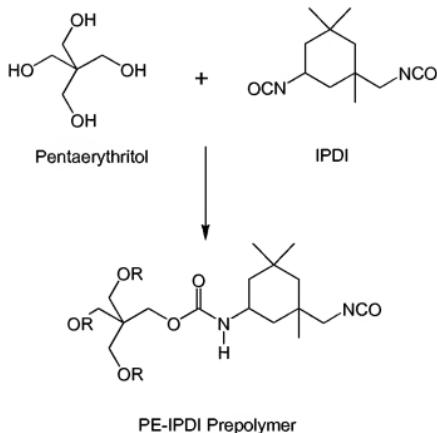
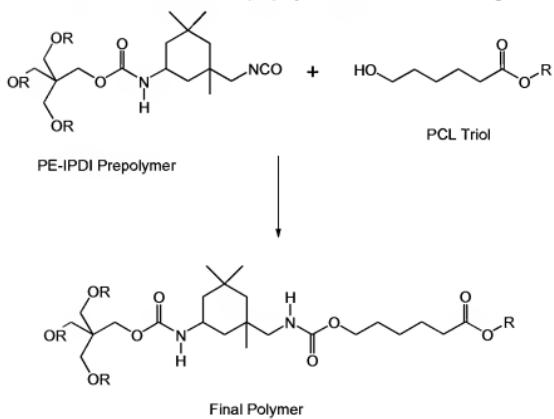
Claims 11-25 and 27-38 are pending.

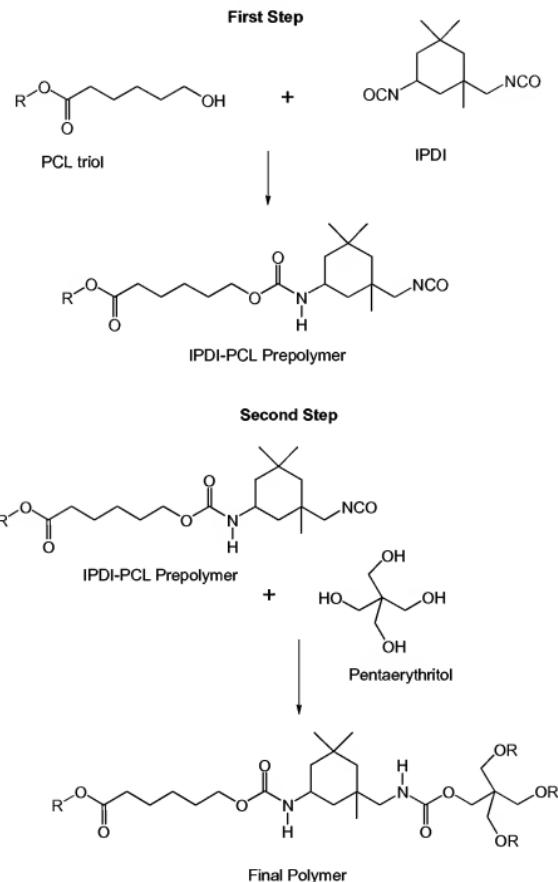
**Response to Rejection Under 35 U.S.C. § 102**

The rejection of claims 11-12 and 19-22 under 35 U.S.C. § 102(b) as being anticipated by LaBelle *et al.* (US 4,412,033) has been maintained. Specifically, the rejection has been maintained over Example 1 of LaBelle *et al.*, which describes a (caprolactone triol)<sub>1</sub>-(diisocyanate)<sub>1</sub>-(pentaerythritol)<sub>1</sub> compound. Although LaBelle *et al.* describes combining the claimed components in a different order than claimed and requires high curing temperatures, the Office contends that the final product of LaBelle *et al.* is indistinguishable from the claimed composition.

The Office's assumptions are misplaced. The order and method of making the claimed compositions does effect the chemical make-up of the final product. Example 1 of LaBelle *et al.* utilizes isophorone diisocyanate ("IPDI"). Because IPDI is an asymmetric diisocyanate each isocyanate group reacts at a different rate with different specificity. As evidence of the different selectivity of the isocyanate groups, applicants attach a copy of Lomölder & Speier, *Selectivity of Isophorone Diisocyanate in the Urethane Reaction Influence of Temperature, Catalysis, and Reaction Partners*, JOURNAL OF COATINGS TECHNOLOGY, 69(868):51-57 (May 1997) ("Lomölder & Speier").

The secondary isocyanate of IPDI reacts many times faster than the primary isocyanate. The secondary isocyanate primarily reacts in the first step of a two-step reaction and the primary isocyanate predominately reacts in the second step. The schemes below illustrate the differences between the compounds of LaBelle *et al.* and the claims. Note that the selectivity for each reaction with the secondary isocyanate in IPDI is high which means that the final product of the claims has selectively oriented the secondary isocyanate towards the polycaprolactone. This results in a composition having a different chemical structure than the composition of LaBelle *et al.*, which will have different properties in terms of hydrolysis rates, degradation products, *etc.*

**Chemistry According to the Claims****Preparation of the flowable prepolymer****Reaction of the flowable prepolymer with the functional oligomer**

**Chemistry of LaBelle *et al.***

The claimed composition and the composition of LaBelle *et al.* have an overall different polymer structure.

The Office's previous statement that the composition of LaBelle *et al.* would anticipate the claims if only one compound of LaBelle *et al.* were the same as one compound of the claimed composition is misplaced. The final product in both situations comprises large, although different, macromolecules. Furthermore, the claims are directed to a "compositions" not to a single monomer or necessarily even a single polymer.

In sum, the compositions of LaBelle *et al.* do not anticipate the claims because the chemical structure of the compositions of LaBelle *et al.* is different than the chemical structure of the claimed compositions. According, the rejection should be withdrawn.

#### **Response to Rejection Under 35 U.S.C. § 103**

The rejection of claims 11-12, 14 and 19-22 as obvious under 35 U.S.C. § 103(a) over LaBelle *et al.* in view of Mülhaupt *et al.* (US 4,908,406) has been maintained. In addition to the reasons set forth in applicants' previous submissions the rejection is improper because:

- (1) Modifying the prior art according to the claims renders the prior art unsatisfactory for its intended purpose;
- (2) The references do not account for every element of the claims; and
- (3) The processes described in the prior art does not produce the claimed compositions.

The rejection is improper because modifying the compositions of LaBelle *et al.* and Mülhaupt *et al.* according to the instant claims renders the prior art compositions unsatisfactory for their intended purpose. "If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." *In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984); *See MPEP* § 2143.01.

The compositions of LaBelle *et al.* and Mülhaupt *et al.* are described as adhesives, coatings, sealants and the like. See e.g., abstract of La Belle *et al.* and column 5, lines 55-64 of Mülhaupt *et al.* The compositions of LaBelle *et al.* are used in automotive applications to bond aluminum sheet molding to itself. See the examples of LaBelle *et al.* Modifying the compositions of LaBelle *et al.* so they are “biodegradable” and “biocompatible” would render them unsuitable for industrial use where the long term integrity of the composition is critical. Compositions used in automotive applications must withstand weathering and not degrade, in contrast to the claimed compositions, which are biodegradable.

Furthermore, all of the examples in LaBelle *et al.* include plasticizers, e.g., HB-40, which is unsuitable for biomedical application and therefore not “biocompatible.” See Declaration of Pathiraja Gunatillake, para. 19. Removing the HB-40 from the compositions of LaBelle *et al.* to make the compositions “biocompatible” according to the claims would also likely render the composition unsatisfactory for their intended purpose. Moreover, the instant claims provide that the compositions are curable at a temperature of 30°C; whereas the compositions of the prior art require curing at much higher temperatures. Failing to cure the compositions of LaBelle *et al.* and Mülhaupt *et al.* would also render them unsatisfactory for their intended purpose.

Because modifying the prior art according to the instant claims destroys its intended purpose, the rejection is improper and should be withdrawn.

The rejection is further improper because the references do not account for a “biodegradable” and “biocompatible” composition. To establish *prima facie* obviousness, all the claim limitations must be accounted for. The Board of Patent Appeals and Interferences recently stated:

When determining whether a claim is obvious, an examiner must make a searching comparison of the claimed invention – *including all its limitations* – with the teaching of the prior art.” Thus, “obviousness requires a suggestion of all limitations in a claim.” Moreover, as the Supreme Court recently stated, “*there must be some articulated reasoning* with some rational underpinning to support the legal conclusion of obviousness.”

*In re Wada and Murphy*, Appeal 2007-3733 (Bd. Pat. App. & Inter. 2008) (internal citations omitted, underline added).

The compositions of LaBelle *et al.* and Mülhaupt *et al.* are described as adhesives, coatings, sealants and the like. *See* abstract of La Belle *et al.* and column 5, lines 55-64 of Mülhaupt *et al.* The compositions of LaBelle *et al.* are used in automotive applications and to bond aluminum sheet molding to itself. *See* the examples of LaBelle *et al.* Compositions for industrial use (such as use in automotive applications) are designed to withstand degradation (as opposed to the claimed subject matter, which is biodegradable). Furthermore, “biocompatible” compositions, unlike compositions for industrial use, must be safe for administration inside the body. *See* Declaration of Pathiraja Gunatillake, para. 19. Care must be taken to avoid toxicity. *See id.* Furthermore, with respect to solvents, the specification explains that it is “especially important in biological applications” to be aware of solvents because “many solvents are not biocompatible and may, in fact, be toxic to cell sustainability.” *See* paragraph [0028]. Because the references do not account for “biodegradable” and “biocompatible” compositions the rejection is improper and should be withdrawn.

Finally, the process described in the prior art produces a different composition than claimed, as evidenced by the different physical properties of the prior art compositions, *e.g.*, the need to be cured at high temperatures. The Advisory Action dated March 8, 2010, noted that Example 1 of LaBelle *et al.* describes a composition comprising components encompassed by the claims. As explained above in response to the rejection under 35 U.S.C. § 102(b), Example 1 of LaBelle *et al.* produces a different final product than the claimed composition. Example 1 utilizes isophorone diisocyanate (“IPDI”), which is an asymmetric diisocyanate. Each isocyanate group reacts at a different rate with different specificity. This is evidenced by Lomölder & Speier (attached). The secondary isocyanate of IPDI reacts many times faster than the primary isocyanate. Thus, the secondary isocyanates will predominately react in the first step of a two-step reaction and the primary isocyanates will predominately react in the second step. Due to the high reactivity of the secondary isocyanate in IPDI the final product of the claims has selectively oriented the secondary isocyanate towards the polycaprolactone. This results in a

final composition having a different chemical structure than the composition of LaBelle *et al.*, which will have different chemical properties.

In sum, the rejection is improper and should be withdrawn because modifying the prior art to arrive at the claimed invention destroys its intended purpose, the prior art does not account for every elements of the claims, and the process described in the prior art produces a different composition than claimed.

### **Rejoinder**

Claims 11-12, 14, and 19-22 are in condition for allowance. Claims 13 and 15-18 depend from and require all the limitations of claim 11 (claim 11 is a linking claim), and are therefore entitled to rejoinder upon allowance of claim 11. MPEP § 809 explains:

When all claims directed to the elected invention are allowable, should any linking claim be allowable, the restriction requirement between the linked inventions must be withdrawn. Any claim(s) directed to the nonelected invention(s), previously withdrawn from consideration, which depends from or requires all the limitations of the allowable linking claim must be rejoined and will be fully examined for patentability.

Accordingly, applicants hereby exercise their right to rejoinder of claims 13 and 15-18.

Claims 23-25 and 27-38 are directed to processes/methods for making/using the elected subject matter and are therefore entitled to rejoinder upon allowance of claims 11-12, 14, and 19-22. *See MPEP § 821.04(b) (“[w]hen all claims to the elected product are in condition for allowance, all process claims eligible for rejoinder must be considered for patentability.”)*

In preparation for rejoinder, applicants have cancelled claims 1-10 and 26 (claims not depending from linking claim 11) and ensured that claims 13, 15-18, 23-25 and 27-38 depend from and are commensurate in scope with claim 11 (and comply with the requirements of 35 U.S.C. § 112). Accordingly, applicants hereby exercise their right to rejoinder of these claims.

In view of the above, consideration and allowance are respectfully solicited.

In the event the Examiner believes an interview might serve in any way to advance the prosecution of this application, the undersigned is available at the telephone number noted below.

The Office is authorized to charge any necessary fees to Deposit Account No. 22-0185.

The fee for an extension of time is being submitted with this response. Applicants believe no additional fee is due. However, if a fee is due, please charge our Deposit Account No. 22-0185, under Order No. 21444-00022-US from which the undersigned is authorized to draw.

Dated: April 26, 2010

Respectfully submitted,

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